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| 10/683,712 | 10/10/2003 | Georg Bogner | P2001,0258 | 2057 |

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| EXAMINER | |
|---|---|
| NGUYEN, JOSEPH H | |

| ART UNIT | PAPER NUMBER |
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| 2815 | |

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 10/683,712 | Applicant(s) BOGNER ET AL. | |
|---|---|---|---|
| | Examiner Joseph Nguyen | Art Unit 2815 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-22,26-35 and 38-50* is/are rejected.

7)☒ Claim(s) *7,8,23-25,36 and 37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/12/03, 10/10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 9, 12-18, 26-35, 38-40, 43-46, 49-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimozawa (JP 10303464).

Regarding claim 1, Shimozawa discloses on figure 1 a lead frame for a radiation emitting component 5 comprising a mount part having at least one wire connecting area and at least one external electrical connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at least one chip mounting area 9.

Note that term "separately manufactured" is merely product by process and therefore does not structurally distinguish the claim over Shimozawa herein.

Regarding claim 3, Shimozawa discloses on figure 1 said thermal connecting part 10 and said mount part 2 are connected by at least one of the group consisting of a soldered connection.

Regarding claim 4, Shimozawa discloses on figure 1 a connection between said thermal connecting part 10 and said mount part 2, said connection being at least one of a soldered connection.

Regarding claim 9, Shimozawa discloses on figure 1 said thermal connecting part 10 contains at least one of copper.

Regarding claim 12, Shimozawa discloses on figure 1said lead frame 2 contains at least one of copper and iron.

Regarding claim 13, Shimozawa discloses on figure 1 said connecting strip 2 has a surface coating for improving component mounting characteristics.

Regarding claim 14, Shimozawa discloses on figure 1 said surface coating is a coating selected from at least one of a group consisting of a gold coating.

Regarding claim 15, Shimozawa discloses on figure 1the radiation emitting component 5 is a light emitting diode component.

Regarding claim 16, Shimozawa discloses on figure 1 a lead frame for a light emitting diode component 5 comprising a mount part having at least one wire connecting area and at least one external electrical connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at least one chip mounting area 9.

Note that term "separately manufactured" is merely product by process and therefore does not structurally distinguish the claim over Shimozawa herein.

Regarding claim 17, Shimozawa discloses on figure 1 a housing for light emitting components comprising a lead frame including a mount part having at least one wire connecting area and at least one external electrical connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at least one chip mounting area 9.

Note that term "separately manufactured" is merely product by process and therefore does not structurally distinguish the claim over Shimozawa herein.

Regarding claim 18, Shimozawa discloses on figure 1 a housing base body 7 formed from a molding compound; said lead frame 2 being embedded in said base body to pass out said connecting strip 2 from said base body, and said thermal connecting part 10 having a thermal connecting surface thermal connectable from the outside.

Regarding claim 26, Shimozawa discloses on figure 1said housing is a surface mounted housing.

Regarding claim 27, Shimozawa discloses on figure 1 said lead-frame is a surface mounted lead-frame.

Regarding claim 28, Shimozawa discloses on figure 1the light emitting components 5 are light emitting diodes.

Regarding claim 29, Shimozawa discloses on figure 1 a housing for light emitting diodes comprising a lead frame including a mount part having at least one wire connecting area and at least one external electrical connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at least one chip mounting area 9.

Note that term "separately manufactured" is merely product by process and therefore does not structurally distinguish the claim over Shimozawa herein.

Regarding claim 30, Shimozawa discloses on figure 1 a radiation emitting component comprising a radiation emitting chip 5; and one of a lead frame having a mount part having at least one wire connecting area and at least one external electrical

connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at léast one chip mounting area 9; and a housing 7 for light emitting components having a lead-frame including a mount part having at least one wire connecting area and at least one external electrical connecting strip 2; and a thermal connecting part 10 linked into said mount part, said thermal connecting part having at least one chip mounting area 9.

Note that term "separately manufactured" is merely product by process and therefore does not structurally distinguish the claim over Shimozawa herein.

Regarding claim 31, Shimozawa discloses on figure 1 said chip 5 is a semiconductor chip.

Regarding claim 32, Shimozawa discloses on figure 1 said chip 5 is at least partially sheathed with a radiation permeable compound 7.

Regarding claim 33, Shimozawa discloses on figure 1 said radiation permeable compound 7 is a plastic.compound.

Regarding claim 34, Shimozawa discloses on figure 1 said plastic compound 7 is one of a casting resin and a molding compound.

Regarding claim 35, Shimozawa discloses on figure 1 said plastic compound 7 contains at least one of a group consisting of an epoxy resin.

Regarding claim 38, Shimozawa discloses on figure 1 said chip 5 is a semiconductor chip mounted on said chip mounting area of said thermal connecting part 10.

Regarding claim 39, Shimozawa discloses on figure 1 said chip 5 is connected to said chip-mounting area by one of an adhesive bond and a solder.

Regarding claim 40, Shimozawa discloses on figure 1 said chip 5 is one of adhesively bonded and soldered to said chip-mounting area.

Regarding claim 43, Shimozawa discloses on figure 1 a wire connection 8 electrically conductively connecting said chip 5 to said wire connecting area.

Regarding claim 44, Shimozawa discloses on figure 1a method for producing a semiconductor component according to claim 30 which comprises providing the mount part 2; linking the thermal connecting part 10 having the chip mounting area into the mount part; fitting the radiation emitting chip 5 to the chip mounting area; and embedding the mount part and the thermal connecting part in a housing molding compound 7.

Regarding claim 45, Shimozawa discloses on figure 1 connecting the thermal connecting part to the mount part by soldering.

Regarding claim 46, Shimozawa discloses on figure 1 fitting the chip 5 to the chip mounting area before the mount part and the thermal connecting part are embedded in the housing molding compound.

Regarding claim 49, Shimozawa discloses on figure 1 embedding the mount part and the thermal connecting part in the hosing molding compound by one of injection molding and injection compression.

Regarding claim 50, Shimozawa discloses on figure 1 the method for producing a semiconductor component comprising providing a lead-frame having a mount part; at

least one wire connecting are; and at least one external electrical connecting trip 2; and providing a thermal connecting part 10with at least one chip mounting area; linking the thermal connecting part into the mount part; fitting a radiation emitting chip 5 to the chip mounting area; and embedding the mount part and the thermal connecting part in a housing molding compound.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> **(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.**

Claims 2, 5-6, 10-11, 19-21, 41-42, 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimozawa as applied to rejected base claims above, and further in view of Suzuki (JP 11346006).

Regarding claim 2, Shimozawa discloses on figure 1 substantially all the structures set forth in the claimed invention except said mount part having one of a bracket and an eye into which said thermal connecting part being linked. However, Suzuki discloses on figures 1 and 4 said mount part 4 having one of a bracket and an eye into which said thermal connecting part 2 being linked. In view of such teaching, it would have been obvious to one of ordinary skill to modify Shimozawa by having said mount part having one of a bracket and an eye into which said thermal connecting part

being linked for the purpose of improving the packing of a chip in a semiconductor device.

Regarding claims 5-6, 10-11, 19-21, 41-42, 47-48, Shimozawa and Suzuki together disclose all the structure or steps of the method set forth in the claimed invention.

### *Allowable Subject Matter*

Claims 7, 8, 22-25, 36-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications.

JN
October 20, 2004.

JEROME JACKSON
PRIMARY EXAMINER